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Standard Costs

By R. E. LOVE,
The Hoover Co., Ltd., Hamilton.

(Before Central Ontario Chapter, February 12, 1931.)

IN giving my talk to-night I will try to only touch very briefly on the requirements for the installation of the standard cost system. Before going into detail we must first get on to a common working basis to know what should be expected from standard costs. Some of you have heard me compare standard cost to a golf game. Par may be set at 74. The majority of men are not able to secure much better than 80, whereas a few professionals and others on lucky days might be able to do it in 70. The same applies to standard costs, which can be compiled along three lines:

First—Standards set as near to accurate as possible.

Second—Standards set as near to normal as possible.

Third—Standards set as near to capacity of the plant or ideal costs.

The first plan is not at all satisfactory with the average firm, because we have lost the meaning of standard entirely, and it would be much preferable for you to use the old costing method than try to have standards kept as nearly as possible to accurate monthly costs. I say this having in mind that if you were to operate the first plan mentioned it would be necessary for the cost accountant to constantly change standards, and any person who is actually operationg standard costs knows the volume of work involved in changing standards.

The second plan which is commonly called standards set on normal production, is, in my estimation, much preferable to any system which has been devised up to the present time and is the plan which I will try to discuss to-night.

The third plan or ideal might have been a wonderful plan had the depression, which started in November, 1929, and which is still with us, not played havoc with the average firm. You will all realize that there are very few firms who are operating at capacity to-day, or are they likely to do so for some time to come.

The Normal Standard

In setting the normal standard we must keep in mind the basic principals of standard costs and why standard costs were installed in the first place as compared with the former methods of costing. The main reasons for installing the system are as follows:

First—To replace emphasis on costing performances rather than costing the product.

Second—To give live data to the management as compared with the average system which was not able to give the information to the management until about the 10th or the 15th of the month after a lot of figures had been accumulated which really meant nothing to the management.

Third—To be able to note the inefficiencies or leaks as quickly as possible, and be prepared to give the facts in a concise way to the proper persons.

Fourth—With this information the management can very often increase the productive capacity of the plant by securing the information quickly that otherwise would have been lost sight of.

Fifth—Standard set up a scientific method for controlling overhead expense. We all know that the figure coming out each month may not divulge any alarming expense, but when this figure is compiled for a year and the general average struck it may disclose a lot of needless waste. For instance, how many of you have compared the monthly cost of stationery used in your various offices and found that each month looked fairly reasonable when the figures were given to you monthly, but, when you compared the grand total for the year with the previous years totals you found that there had been a gradual increase all year so that the aggregate was much higher than it should be.

Sixth—To my way of thinking, the main principal behind standard costs is that you are dealing with exceptions at all times and can spot the trouble quickly which was not obtainable under any former method of costing until after the damage had been done.

Seventh—Standard costs give a constant figure for the sales department to use, and by using ratios the management can base the selling price on correct costs, without having to wait for a considerable time for estimates from the cost department.

Eighth—Standard costs have complete check on the purchasing department, which we all realize is very necessary at the present time.

Ninth—The average management appreciate concise reports and can quickly grasp variations as compared with the conglomeration of figures where the vital information is buried in a mass of detail, usually found in the average cost systems.

Lastly—Standard Costs are much easier to operate and are much more interesting for those working on the costs, with the result that the cost clerks naturally take more pride in operating the system, and, those working on the system can assist in pointing out trouble to the cost executive which would ordinarily have been left entirely up to the executive to find.

Different Methods

There are also different ways of setting up normal costs.

First—By setting a normal cost for a factory as a whole.

Second—Setting up normal costs by departments, we also find instances of where standards are being set for several branch plants using the one basis in costs. This latter method is not quite so necessary in Canada, and I doubt if it is much used here, except where a Canadian plant is perhaps a branch of an organization in another country, in which case those in charge in the Canadian plant will not have much say regarding the method of costing used. We do find however, many Canadian branches of a larger organization located outside of Canada who are using more or less similar standards, and the plants are competing against each other in so far as costs are concerned. In fact I know of instances where the Canadian branch

1.

MATERIAL COST VARIANCE RECORD

The Hoover Company Limited

Month _____ Account _____ Account No. _____

Date	Vendor	Invoice No.	Material	Quantity	Actual Cost		Standard Cost		Variance From Standard	
					Price	Amount	Price	Amount	Over (Debit)	Under (Credit)

3.

DIRECT LABOR VARIANCE RECORD

Month _____ Department _____

Day	Man Number	D Day Rate	P Piece Rate	Part Number	Operation Number	Pieces	Actual Cost		Standard Cost	
							Rate	Amount	Rate	Amount

7.

YEARLY COST VARIANCE REPORT

No.	NAME	Stand-ard	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Stand-ard	Sept.	Oct.	Nov.	Dec.
1585	Motor Assembly										0.00	0.00			
2680	Armature										0.00	0.00			
1727	Main Casting										0.00	0.00			
2750	Handle Assembly										0.00	0.00			
2767	Bag Assembly										0.00	0.00			
2935	Agitator Assembly										0.00	0.00			
50201	Bail Assembly										0.00	0.00			
700	Complete Cleaner										00.00	00.00			

can produce more economically than the parent plant, caused from a lower burden rate as they do not have the high executive expense and many of us know that the overhead expenses goes up very fast when a firm reaches a certain period in production, where it has to subdivide departments. Of course in comparing costs between plants the question of duty must be left out of the material cost. This can readily be treated as a separate item in the general ledger and not added as part of the costs for comparative purposes.

Before going into detail of operating the various branches of the standard cost system, I want to first make myself clear as to my theory for handling standards in the financial books. I have heard several men talk on standards, some who recommend treating costs as a separate unit not to be entered in the financial books and others in favor of the cost records becoming a part of the financial records, and I am convinced that the proper method is to have all costs records become a part of the financial records of any firm. In fact I am very much opposed to any books or records being kept in any office which do not finally tie in to the general ledger. Such records are almost invariably misleading and are too easily explained away by excuses. Almost invariably you will find the general ledger keeper will use an alibi that he did not realize that certain information tied in to the costs or vice versa.

I do not propose dealing with the records necessary for the proper installation of the system nor to tell further of the advantages of the standard cost system because this subject has been thrashed out by various members of our Society even since it was formed a few years ago. We were discussing at that time the advisability of installing a cost system. To-day we all admit the need of a cost system and many of us are thinking of further uses of standard costs. At the present time we are more interested in securing vital statistics quickly.

Material Records

Might I first deal with the Material Ledger and the Material Cost Variances record. It is admitted by all that the material ledger is always kept at standard no matter what price it is purchased for. The quantities both in and out of the ledger are entered at standard. This does two things. First—it is necessary for those working on the material ledger to enter in the material cost variance record the difference between standard and actual. This gives us a complete picture of the ability of the purchasing department or the trend of costs quickly. Second—it means that the material requisitions for parts to be used in the manufacture of the products can be entered more quickly because there is only one standard price and you are not taking it out of stores, say 600 at 9.98 and another hundred at 9.75 and the balance at 9.68. The standard is set and used constantly.

The Material Variance record which I would suggest you use should show the name of the vendor, your purchase invoice number, description and quantity, next the actual cost per unit and total as shown on the invoice. Second—the standard unit cost and the standard for the total quantity as entered in the material ledger, and the last two columns would show the variations from standard, one column being for over and the other for under standard. When the

2. BALANCE ON HAND

To.....Stock Room No.....Date.....

DESCRIPTION One Item Only	Part Number	Actual Quantity On Hand	Date Counted	Time of Count

Counted by .....

Ledger Balance.....

Difference .....

Storeskeeper

STOCK ROOM SHORT	Quantity	Price	Per	Amount
	Ledger Adjusted by		Debit Acc't No. Inventory	Credit Acc't No.

STOCK ROOM OVER	Quantity	Price	Per	Amount
	Ledger Adjusted by		Debit Acc't No. Inventory	Credit Acc't No.

Instructions to Storeskeepers: 1—Gather all Filled Requisitions and Pin to This Card.
2—Make Careful Count of Stock and Fill in Quantity, Date and Time, Then Sign.
3—Send This Card and Filled Requisitions to.....
Stores Ledger Clerk Dept.

4. MACHINE CARD

(Use One Card for Each Machine)
If Night Turn Clip Corner

Dept.....Machine No.....Operation No.....

Machine Attendant Clock No. Name

CLOCK RECORD	Hours	Lot or Order Number	Part Number	Good pieces	Down Shut Cause
F					
S					
F					
S					
F					
S					
F					
S					
F					
S					
F					
S					
F					
S					

Shut Down Cause: Use Number

1. Die and Tap Setting
2. Tool Grinding and Adjusting
3. Waiting for Tools
4. Stocking Up
5. Break Down
6. Motor Trouble
7. Power Off
8. Cleaning Up
9. No Stock
10. No Orders
11.
12.

Checked .....
Posted .....

.....
O.K. Foreman

month is over a glance at the outer two columns give you the whole picture of all the variations and as stated before you can readily tell whether prices are going up, whether the purchasing department is functioning satisfactorily or whether the department is buying standard material in quantities which will enable the purchasing department to purchase economically. A separate sheet for material cost variance record should be kept for each stores ledger or account as shown in the general ledger.

Labor Records

The next phase we will deal with is the labor variance record. It is admitted that the labor variance records are the most complicated to keep of any record there is in the standard cost system, but even this record is very simple provided you are connected with a firm who have the right type of management and plant superintendent, by this I mean to say, that if you are with a firm who are trying to use the slogan of live and let live, not the type of manager who is trying to reduce the wage of the employee at every opportunity and one who is willing to let the men earn a decent wage and who will have the opportunity of trying to produce as much as possible in a given time without being afraid of having his piece rate cut because he was fortunate enough to produce an extra high average through the fact that he had a high grade material to work with or that he was using new dies which enabled him to produce a larger quantity in a given number of hours. Then your payroll department will have a fairly easy job and experience has shown those firms who have really tried it that contented employees win out in the end, because of faster production. With the standard cost system it is only necessary to post the variances, therefor it is quite important that changes if contemplated, or changes in operations for speeding up the work, would be made prior to setting the new standards, otherwise the variations must be posted each time an operation is performed. If the standard piece rate is paid no posting is necessary and for the first few months after the standard rate is set, the payroll department have a very simple job, but as time goes on and new operations are added the work become heavier and it is usually this fact which forces the cost department to change the previous standards.

Piece Work Basis

First of all it is admitted that every operation must be on piece rate. I imagine I hear some of you who have not installed the standard cost system say, "That is impossible," but if such is the case I disagree with you. It is possible that you cannot pay the person performing direct labor a piece rate, but there is no reason why the cost clerk cannot reduce the amount of work performed to a piece rate and in extending the time card it is necessary to extend the standard piece rate as well as the day rate paid to the employee, if there is a variation it must be posted to the direct labor variance record. If you have an item which you simply cannot set a piece rate on, then the cost of the labor must be thrown into the expense ledger as indirect labor on the product, similar to indirect material on the product and this figure absorbed in the burden. The good executive will quickly spot whether the cost accountant is doing the job he is supposed to perform if this figure in the expense ledger amounts to any volume. Painting a small part on the product might be termed one of these items.

5. INDIRECT LABOR

If Night Man Clip Corner

Clock No. Name

Hours	Pieces	Amount	Account Number	Letter and Order No.
			Work Done	
F				
S				

Hours	Pieces	Amount	Account Number	Letter and Order No.
			Work Done	
F				
S				

When Working All Day on Same Job Use Space Below

Hours	Pieces	Amount	Account Number	Letter and Order No.
			Work Done	
Out				
In				
Out		Extended	Checked	Posted
In				

Total Hours Total Earnings

O.K. Foreman

(Reverse of Indirect Labor Card)

Do Not Use This Side Until Other Side is Filled

Hours	Pieces	Amount	Account Number	Letter and Order No.
			Work Done	
F				
S				

Hours	Pieces	Amount	Account Number	Letter and Order No.
			Work Done	
F				
S				

Hours	Pieces	Amount	Account Number	Letter and Order No.
			Work Done	
F				
S				

Hours	Pieces	Amount	Account Number	Letter and Order No.
			Work Done	
F				
S				

There is also another factor which is—What is direct labor on the product? There may be some present who would tell us that an employee working on a battery of automatics turning out screws, nuts or bolts should be direct labor employees, and the cost should be figured on the direct labor hours. However, my own idea is that the machine hour are the determining factor in this instance and the employee should work on an indirect labor card.

Cloth may also be treated in a different way, usually costed by the pound with the employee working on an indirect card until we come to the manufacture of the article from the cloth when they work on a direct labor card.

Nickel plating would be another instance where I would suggest that the employee would use an indirect labor card and the nickel plating would be costed on the basis of square inches. Any of these items are subjects for discussion and depend largely on the volume of work performed in the department. But, as stated previously, I would put as many employees who are working directly on the product on direct labor cards as possible, and every direct labor card should be extended on a piece rate basis so that the variations can be posted. The labor variances report should be set up by departments by months and should show the following information:

First—The date.

Second—The man number.

Third—Whether he is paid by day rate or piece rate.

Fourth—The part number.

Fifth—The operation number.

Sixth—The number of articles produced.

Seventh—The actual cost by rate and total amount.

Eighth—The standard cost by rate and amount.

Changing Standards

This looks like a mass of detail to get out, but the actual history of this proves it to be entirely different to expectations, because if you will let the production manager, or the person responsible for setting the piece rates, see the labor variance record after it has been in operation a couple of months, they will readily realize what is taking place, where the changes have been made, and have perhaps added to the cost or vice versa. It also should be pointed out to them that certain changes may have reduced the number of pieces per hour which can be performed, thus increasing the burden, with the result that the tendency will be to eliminate changes, and there will be more co-operation on the part of the department foreman and plant managers with the cost department, because they know that the variations are being presented to the management and the places where they thought they were making a saving are not reflecting at all to their credit, resulting in them being rather reluctant to make any changes until they have consulted the cost department. I would recommend that the cost accountant tell the plant manager at least two or three months in advance of the time they propose changing the standards which have been previously set so that any changes in rates, if necessary, can be made before setting the new standards, which will save a lot of work in the payroll department later on.

There is one item in the labor variance record which has apparently been overlooked by different men operating a standard cost system, that is the question of eliminating certain operations or adding new operations after a standard has been set. In both instances the total must be posted in the variance record either as a debit or a credit, otherwise the in process account will not show a true figure. It is very easy to overlook this one phase, and it should be guarded against at all times. As an instance, we might find that

6. PRODUCTION COST VARIANCE REPORT

The Hoover Company Limited

.....Ending.....19.....
Month or Week

ITEM	Plant or Department	Standard	Actual	Variance from Standard Over Standard	Variance from Standard Under Standard
PRODUCTION HOURS					
Foundry and Polishing	2100	0000.0	0000.0		000.0
Machine	2300	0000.0	0000.0	00.0	
Automatic	2400	000.0	0000.0	000.0	
Assembly	2700	00000.0	00000.0	000.0	
	TOTALS	00000.0	00000.0	000.0	000.0
	NET VARIANCE				00.0

BURDEN RATES

DEPARTMENT	Total Hours	Net Expense	Rate Used	Actual Rate This Month	Actual Rate Yr. to Date
Foundry and Polishing	0000.0	0000.00	1.00	.87	.91
Machine	0000.0	0000.00	1.00	.90	.99
Automatic	000.0	000.00	.60	.82	.79
Assembly	00000.0	0000.00	.90	.86	.91
TOTALS	00000.0	00000.00			

BURDEN VARIANCE

DEPARTMENT	Standard Burden	This Month Over Standard	This Month Under Standard	Year to Date Over Standard	Year to Date Under Standard
Foundry and Polishing	00000.00		000.00		000.00
Machine	0000.00		000.00		00.00
Automatic	000.00	000.00		000.00	
Assembly	0000.00		000.00	000.00	
TOTALS	00000.00	000.00	0000.00	0000.00	
NET VARIANCE			0000.00	000.00	000.00

LABOR VARIANCE

Foundry and Polishing	2100	00.00	
Machine	2300	00.00	
Assembly	2700	000.00	
TOTALS		000.00	
NET VARIANCE		000.00	

operation No. 16 on a certain part can be eliminated. One hundred pieces were produced per hour, and the piece rate was 80c per hundred. If the piece rate was not taken care of through the variance record the in process record would be getting a credit at the end of the month for the total quantity of the finished products produced at standard, whereas the actual facts were that none of this operation No. 16 had been performed. This also applies to material used in the final assembly department.

PRODUCTION COST VARIANCE REPORT

The Hoover Company Limited

.....Ending.....19.....
Month or Week

ITEM	Plant or Department	Standard	Actual	Variance from Standard Over Standard	Variance from Standard Under Standard
MATERIAL VARIANCE					
Raw Material.....	4000			000.00	
Rough and Semi-Finished Parts	4001				00.00
Finished Parts.....	4002			000.00	
	TOTALS			000.00	00.00
	NET VARIANCE			000.00	

MELTING COST	Pre-determined rate per lb.	Standard	Actual	Over Standard	Under Standard
Melting (This Month)..	.000	0000.00	0000.00	00.00	
Melting (Yr. to Date)				000.00	

SUMMARY OF COST VARIANCE

	This Month Over Standard	This Month Under Standard	Year to Date Over Standard	Year to Date Under Standard
Net Labor Variance.....	000.00		000.00	
Net Material Variance..	000.00		0000.00	
Net Burden Variance....		0000.00	000.00	
Net Melting Variance..	00.00		000.00	
TOTALS	0000.00	0000.00	0000.00	
NET TOTAL VARIANCE HOURS		000.00	0000.00	
Net Production Hours Variance		00.0		000.0

RE-OPERATION LABOR		
Foundry and Polishing	2100	00.00
Machine	2300	0.00
Assembly	2700	00.00
TOTALS		00.00
SCRAP COST	Account No. 3911	00.00

Overhead Standards

Overhead or burden variances under standard costs are handled quite similar to regular costing procedure, and can be treated in two ways. First, by distribution of all burden expense to departments, or if you are manufacturing only one class of product it will save a certain amount of time to take all the departmental expenses and throw them into the general plant expense, in which case you would only have one burden rate to apply to the product instead of several rates if distributed by departments. In standard costs you use the same system of applying a burden rate, which is usually on the number of direct labor hours or the number of machine hours, whichever is the determining factor.

No doubt you have had many interesting discussions at your meetings regarding what are items which should be entered into the burden accounts, and I doubt very much if it would be wise for me to enter into any discussion as to the proper method of burden distribution, other than to say that I believe the departmental expenses should be kept in the expense ledger in a manner which enables the proper picture to be presented to the management at the end of the month on the financial reports. Some firms are only putting in the departmental expenses such items as are controllable. All other items are put into general plant expense, with the result that it is only necessary to copy the expense ledger monthly and year to date figures as compared with the previous years figures in order to have available for the department heads and plant managers all expenses which would be of any use to them.

This method, however, does not give a true picture of the departments expenses. For instance, if "A" Department was using twice as much space as "B" Department, and also require more expensive machinery, they should be charged with the depreciation, light, heat and power, and all other expenses even though their production might be low. Otherwise, if the depreciations were only charged to general plant, "B" Department would have to absorb a certain amount of "A's" expenses, and if "B" Department was turning out a product of its own which did not touch "A" Department, you would get a cost which would not be at all correct.

Having this in mind, I am very much in favor of throwing all expenses which can be segregated into the correct departments, either through the purchase journal or the cost vouchers. Any of you who have made a real study of costs have no doubt found instances where certain products which you were manufacturing were really carrying the other products, and in some instances you have no doubt found where products were being produced and sold at a loss. If this is true of products, it is also true of departmental expenses.

Furthermore, if foremen or department heads were aware of the fact that many items were being charged into general plant expenses it would have a tendency for them to not economize in the overhead to some extent. The same might also be said of the cost department itself. The clerks in the department would have a tendency to throw expenses into the general plant account rather than the departmental account, in order to save time or because they did not want to take the trouble to ascertain where the expense items should go. Did you

ever open an extraordinary expense or miscellaneous account by departments and watch the figures grow in this account if not checked? If some of you have never tried it, I would suggest that you do so for curiosity's sake. After six months' trial analyze the account, and you will then appreciate how quickly the habit will grow to take the course of least resistance.

Speed is Necessary

About the hardest job in salesmanship the cost accountant has, is to sell the department heads on the idea that fast production reduces the cost of the article manufactured. It is hard for any foreman to see that by paying a piece rate of 2c per part, and one man turns out 50 parts per hour, another man only turned out 40 parts in the same length of time, why it makes any difference to the company. There is also a tendency, in depression times, to permit work to go through departments at a slower rate, knowing full well that they are only expected to produce a given number of finished articles. There is naturally a tendency to let the man take his time, with the result that the burden on the article is quite high as compared with normal periods when there is volume production. It would give a much better picture to the management, and so far as that is concerned the management would be further ahead to pay the man for idle time rather than keep the machinery going continually because of the slow workman. Costs would be much more accurate, and as you know this is very essential when competition is so keen.

In so far as controlling the standards are concerned, no doubt each plant has to set up certain methods which will give the required information. Some managers will want to know the variations for practically every item; others are only interested in the main reasons, leaving it up to the cost accountant to draw the proper department's attention to all minor fluctuations.

Specimen Forms

I have brought with me a few samples of the machine card which we are using at present for our automatic department. Each machine is clocked in and out similar to the direct labor employee for each lot by the machine. Idle time of any description is itemized with the twelve numbers shown on the bottom of the card. The individual card may mean nothing, but it is interesting to know at the end of the month when the various cards are tabulated for the month, that one machine may only be idle 5% of the time and another machine idle 55%. This is one very simple method we have of ascertaining if we are receiving full value from the machines we have in the plant.

Some of the men in your chapter spoke to me in Toronto several months ago about a sample of our balance-on-hand cards which we were using to control stocks. I have a few samples with me which I will try to briefly explain. First, it must be understood that the balance-on-hand cards are given out by the stores ledger clerks, and the number to be given out is determined by the fact that everything in the stores must be counted at least once every three months. The stores ledger clerks simply mark on the card to what stores the card is to go and the description and part number, if any; the balance of the upper portion is filled in by the person who makes the physical

count in the stores department, which is then compared with the stores record before returning it to the office. By using these cards we have found that there is very little danger of stock records going very far astray, and in case they do the error can be traced without a great amount of effort. The bottom portion is for the use of the Cost Department, and is self-explanatory.

Standard Costs Eliminate Detail

As I mentioned previously, standard costs do away with a mass of detail records, in that the management is only interested in the variations. In preparing a figure for the management I would suggest the following items, which can be elaborated on if necessary, but which I believe will give everything of real importance that should be shown:

First—Total production hours by departments comparing the standard with the actual and giving the variances over or under.

Second—The burden rates by departments showing the total hours and net expenses; next, showing the rate used and the actual rate for the month and year to date.

Third—The burden variances showing the total standard burden according to the number of hours worked and the month and year to date both over and under applied with the net variances.

Fourth—The labor variances over or under and the net variances.

Fifth—The material variances by stores ledger accounts.

Practically all the items I have mentioned can be shown on one page, with the result that the manager has a clear picture of where to look for any additional information without having to go through a volume of detail to tell where there might be any trouble.

It is very nice information to also show the manager a summary of the labor variances, material variances and burden variances for the month and year to date both over and under. In our own plant we also prepare a melting variance cost for our own information, also the amount we have to pay for re-operation labor; we also want to know the amount of scrap charged into the expense account at cost. From these reports we then prepare another report, showing the variances by months, using the actual as compared with the standard. This is a very simple report to get out, and lets the management have their reports not later than the 8th of the month, and often this can be improved upon if it is found necessary to do so, by changing certain routine.

Our experience is that about the worst job we have in order to secure actual costs promptly to compare with the standards is to have vendors send us their invoices. This may seem a peculiar statement to make. Nevertheless, it is only too true. Apparently some firms do not realize the importance of sending invoices through promptly. Have you ever noticed instances where the invoices are received in one mail perhaps three weeks overdue, and the monthly statement of the account received in the following mail. I will give you a few examples. Our experience is that printers are about the worst offenders, next oil companies, lumber companies and jobbers. They either have so much money on hand that they do not want prompt remittance or

in the case of the jobbers and oil firms, other firms are carrying them and they are not interested in prompt payment, resulting in the cost department of the purchasers being unduly held up through the vendors' kindness in not sending invoices. However, I am not here to sympathize with cost accountants, because my experience is that they are well able to take care of themselves, but I want to say this in fairness to those who are operating the regular job order or actual cost systems, that during the next ten years I really believe costs will develop equally as far in advance of standard costs as standards are in advance over former methods, therefore, there is no reason for any of us to put on the silk hat.

I have under my glass on my desk a piece of poetry which I found one time, and which I believe would be good logic for any cost accountant, which is as follows:

"Here's to the long white road that beckons,
The climb that baffles, the risk that nerves,
And here's to the merry heart that reckons,
The rough with the smooth and never swerves."

The Calendar Question

IN connection with the forthcoming International Conference on Calendar Reform, to be held in Geneva, in October, M. O. Lorenz, Director of Statistics for the United States Interstate Commerce Commission, says:

"Our present calendar is so complex that it is hopeless for anyone to try to memorize it. In transacting business we are as helpless without a printed calendar at hand as a lame man is without his crutch.

"In various ways the splitting of weeks at the end of a month is a nuisance, as, for example, when we wish to aggregate weekly statistics into monthly totals. Comparisons of statistics for one month with those of other months are impaired because of the varying assortments of week days and Sundays which may occur in the various months. It would be more efficient to have holidays come at the beginning or end of a week than to let them wander through the week as they do under the present calendar. Certainly our calendar needs rationalizing. We continue to endure its inconveniences largely because of the human tendancy to do things to-day as they were done yesterday. The calendar is a man-made thing, selfishly tinkered with by a Roman Emperor, and there is no good reason why we should not try to arrange it more sensibly.

Odd Day Holiday

"It happens that there are about 365¼ days in a year. The leap year arrangement approximately takes care of the fraction, and requires but little change, but unfortunately the remaining total, 365, is not divisible into any satisfactory number of equal months, or even equal quarters. Hence, it has been suggested and this is the essence of calendar reform, that we set aside one day at the end of the year as a holiday which might be called 'Year Day', and then proceed to divide up the 364 days in the most convenient manner possible. Year Day would seem like New Year's Day under the present calendar when it falls on Saturday. In leap years there would be a similar extra day

at the middle of the year, to be called 'Leap Day'. Up to this point there is little dispute among those in the United States who want a rational calendar. The relatively small minority that opposes the extra holiday does so chiefly on grounds of religious dogma which the present writer will not undertake to discuss.

"Some calendar reformers want even more than one extra holiday. If five such holidays were set aside, the remaining 360 days in the year could be sliced up into weeks and months very conveniently, if we are willing to change the number of days in the week. Thus, we could have twelve equal months of 30 days each, and five weeks of six days in each month, or six weeks of five days each. But it seems useless to propose a change from the seven-day week in the United States at this time, although it may be desirable to shorten the working time within the seven-day week.

Two Methods

"Given the seven-day week, and with 'Year Day' and 'Leap Day' set aside, there are two possible methods of calendar improvement that are worth while. Which is preferable is a question on which there is room for difference of opinion, according as we are impressed by the advantages and disadvantages of each.

"The equal quarters plan gives us 91 days in each quarter, with two months of 30 days and one month of 31 days. Each quarter could be made to begin as the first of the month and as a Sunday. The second month of each quarter would have a different pattern from that of the first month, and the third month still another pattern. Although the scheme would be an improvement over the present calendar, there would remain the very great objection that each month would contain some fraction of a week, and not all months would have the same assortment of days. A distinct advantage, however, is the retention of 12 months in a year.

"The equal months plan is the simpler of the two. It provides for dividing the 364 days into 13 months, each of exactly 4 weeks or 28 days. In every month, Sundays would come on the 1st, the 8th, the 15th and the 22nd. Mondays always would be the 2nd, 9th, 16th and 23rd of each month. The convenience is obvious. Anyone could soon memorize the calendar. If he were very absent-minded, he could look at his watch, which could easily be made to tell him the second, the minute, the hour, the day of the week and day of the month. The leading objections are that the introduction of an extra month is a rather violent change in custom and the number 13 is not divisible into halves and quarters. The fact that many business corporations have voluntarily adopted 13 periods of four weeks each as being the most satisfactory arrangement for purposes of statistics is pretty good proof that the 13 months' plan would be found workable after we became used to it.

"The trouble and expense of making a change to one or the other of these two plans should not weigh heavily in any broad view of the matter. The cost of making the change is temporary, while the advantages will persist for centuries. Surely, we who enjoy so many advantages to-day resulting from the toil and sacrifices of past generations will not refuse to endure any temporary inconvenience found necessary to inaugurate an improvement that will be of lasting benefit to humanity for centuries to come."

Cost Accounting in Relation to Distribution

By PROF. J. F. DAY,
Associate Professor Economics and Commerce,
University of British Columbia.

(Before Vancouver Chapter, March 24, 1931.)

I FEEL considerable diffidence in appearing before you to-night: you are experts, while I am simply a humble professor, conscious of the vast amount which is still unknown. It would be presumptuous on my part to attempt to deliver an address severely technical in type, and I have a suspicion that such an address would not be welcomed, even were I disposed to deliver such an one.

As a former business man turned into a university Don, however, I may be justified in relating your particular specialization to the present condition of economic society.

It is common-place to say that the problem of distribution is the great problem of our day: this is a fact easily traceable through the economic history of the past 150 years. So long as the world seemed to be expanding without limit; so long as markets were voracious to take goods in ever increasing volume; the problem was one of production, and cost accounting was not appreciated as a factor in efficiency.

When, however, there was progression from excess demand to a relative balancing of supply and demand, the need for detailed and comparative data as to manufacturing costs made itself felt, and those business executives who were the first to appreciate the value of scientific cost records were the ones, in many cases, who held their own, and even gained ground, under the new conditions which manifested themselves.

The rapid industrialization of areas which formerly depended on other countries for manufactured goods (which has been so definite a feature in this twentieth century) rendered still more intense the competition as between manufacturers; forced on them the need for internal economies; and this need called for a segregation of costs to a degree hitherto unknown, in order that departmental and operative costs might be analyzed in the light of past performances as well as of present needs.

It was the development of this nature which gave you gentlemen and your profession the opportunity to obtain the standing which you have obtained, and good advantage has been taken of it.

Extent of Detail

I am sufficient of a heretic to believe that one can have too much of a "good thing." From my own experience in industry, I consider that it is possible to carry segregation of costs down into such detail that the value of costing is largely negatived. When subdivision of detail is carried to such an extreme that the disposition of items can

be determined—after a quarrel between Slavic foremen—by an agreement to pass the charge which is the cause of dispute to a department quite unaffected in fact by the expenditure: when, as sometimes happens, an immature or junior cost clerk interprets a charge as belonging to one of very many subdivisions, simply according to his own predilections, or lack of knowledge, then it is time to call a halt. Further, under such conditions of extreme development of detail, the actual cost of costing is a factor to be considered. I have heard of a company in Great Britain, possessing an exceedingly elaborate costing system, which found it advisable to establish a cost department to analyze the costs of the costing department.

The question as to responsibility in determining costs has its own definite importance. If I may be pardoned for describing a personal experience, I can illustrate the point by a case in which a plant had been shut down towards the end of a period of construction. On re-opening, some isolated construction charges applicable to the work of the preceding period came filtering through, and an item of forty cents for labor caused me to look into certain charges for structural steel, and through this to discover that about $40,000.00 of steel had been charged to the wrong account. It was charitably assumed that one of the very junior young men of the previous regime had passed the steel invoices through without an analysis. As the staff had been almost wholly composed of juniors, the assumption had some justification.

There is, of course, much room for development of scientific costing in modern industry. Even yet, it is remarkable how many captains of industry are not fully informed as to costs, and—let us whisper it—are not capable of appreciating such cost information even if they had it. Nevertheless, the intensity of modern competition is a constant force on your side, in pressing the need for cost segregation as an aid to efficiency in production.

Marketing or Distribution Costs

A still greater field, however, is opening before you, and it is on this that I desire to place emphasis to-night. The expansion of this century in production, intensified by the new productive capacities brought into being by the War, has resulted in the condition called "over-production" or "under-consumption." This over-production has meant the extension of competitive forces in a remarkable degree in the marketing, merchandising, section of our economic structure. We are, in other words, in the condition of a "buyers' market," in which the marketing specialists have to fight to gain and retain outlets for their goods, if they are not going to be eliminated. The decrease in the unit costs of manufacture, brought about by improved technique, which in turn has been aided by the data supplied by cost departments, has not resulted in a passing on to the consumer of such a proportion of the savings as might be expected. (I am aware that there might be dissent to this statement, supported by such spectacular examples as, e.g., automobile prices, but nevertheless I feel that a dispassionate consideration of the factors in the case justify my statement.)

In other words, while manufacturing unit costs have decreased relatively, distributive costs (marketing costs, in the widest sense) have expanded relatively to the extent where they make up a very

considerable proportion of the dollar spent by the ultimate consumer. For instance, the operating expenses according to sales volume was:

In 1927, for retail hardware, a mean between..... 26.1% and 34.2%
In 1927, for retail jewellery, a mean between..... 38.4% and 41.2%
In 1927, for department stores, a mean between..... 28.7% and 31.9%
In 1923, for retail shoes, a mean between..... 27.1% and 31.8%
In 1920, for retail furniture, a mean between..... 31.5% and 34.1%
In 1924, for retail grocers, a mean between..... 17.5% and 19.9%

If to these percentages are added the percentages of other dealers and those who perform distributive functions, e.g., wholesalers, we can see readily that distributive costs account for a weighty proportion of the ultimate dollar charged for the goods.

In certain lines of manufactured goods, the percentages are really excessively large. Such goods as those, for instance, where under specialty salesmen an initial commission can reach as high as 42½% to 50%, with series of percentages taken on volume of sales by the superiors of such salesmen: these, increased by advertising and other marketing costs, make up a very large part of the consumer's dollar indeed.

Must Analyze Sales Costs

The increasingly unfavourable market, from the seller's standpoint, has made it so that the competition of the distributive factors has reached a point which might, without exaggeration, be described as a point of savagery. It is because of the need for efficiencies in distribution that I desire to emphasize the importance of this field, so largely undeveloped, for cost accounting methods. The idea that costing principles end with the delivery of goods into the manufacturer's warehouse should be eliminated. The costs of commerce should receive that degree of development into recognizable uniformity which marks the present stage of industrial cost accounting.

For instance, consider administrative costs of selling. The most common method is to compute the percentage which the total of these costs bears to total sales, and to use that percentage as a basis of determining the administrative charge to specific lines. In actual fact, it should be possible very frequently to allocate such costs more definitely in proportion to service rendered in the routine departments, e.g., sales billing, such allocation of expense to a given line of goods or to a given department being determined by the number of items handled. As to general executives, the way in which such men spend their time, if obtainable from them, would (after a period of years) furnish representative information as to a reasonable distribution of this type of expense.

There is little doubt that analyses of sales expense have often been a cause of irritation: sales managers, regarding manufacture as the legitimate field for activities in costing, have sometimes regarded the sales cost analyst as a nuisance. Nevertheless, the need for such analyses, in order that losses on one line of goods shall be known, even though off-set by ample profits in other lines, is becoming more imperative. In other words, if losses **must** be taken in some lines, such should be done with open eyes, and with a definite purpose in view.

A flat pro-rating of sales administrative expense to all departments of selling is, of course, without justification. The assumption that all lines of goods bear an equal rate cannot be upheld, and it should be realized that manufacturing costs on two kinds of goods can be equal, without an equality in net profits from such goods after ultimate sale. There should be taken into consideration the sales effort, and therefore sales cost, incurred in disposing of one type of article as contrasted with another. Thus, it may be said that the preparation of a budget, covering expected sales and selling expenses—the latter including handling costs, branch warehouses, salaries, commissions, sales offices, clerical help, advertising—gives, through these account segregations, an aid toward an accurate distribution of them against the goods concerned. A distribution of such varied expenses on the same base would evidently be misleading.

Merchandising expenses could well be allocated to certain divisions as a help in ultimate segregation, but the immediate broad division which occurs to the mind is (a) "order getting expense" and (b) "order filling expense."

There is also the question of seasonal distribution of selling expenses which deserves consideration. Where seasonal selling takes place, there is not usually a coincidence of expense with sales. The former might well occur in the spring months and virtually cover expense for the whole year, while the bulk sales would occur in the late fall. Thus, an adjustment of selling costs, to relate such to period sales, would fall logically within the orbit of the cost accountant.

Distribution of selling expense by lines of product also can lend aid in determining whether a company really can afford to handle specific lines, and in this connection, the distribution of "direct" and "indirect" selling expense—scientifically determined—will prove a powerful aid.

Analysis of selling expenses by "classes" of customers is worthy of consideration. By the frequency of buying; by the average size of orders; the latter in particular helping to show what should be the minimum size of an order if it is to pay for the handling. This is not to say that orders below this minimum size should be refused: they might be accepted as an accommodation, but there would be the reasonable policy naturally result of not seeking such orders, although not refusing them if offered. This would prove a direct and beneficial result from costing analysis.

POSITION AVAILABLE

Cost Engineer—Manufacturing company operating mills in Quebec and Ontario has vacancy for a Cost Accountant. Qualifications require British Subject, University graduate in engineering or allied course, practical experience in mill costs and efficiency data, also knowledge of Bedaux Bonus System and Harrison Semaphore System desirable. Must be able to organize cost work of several mills.

Applicant must give in first letter full particulars, references, age, salary expected.

Apply Box S1, The Canadian Society of Cost Accountants & Industrial Engineers, 81 Victoria Street, Toronto, Canada.

Costs Relating to Agricultural Products

By C. D. McCAIG,
Northern Electric Company, Montreal.

(Before Montreal Chapter, February 5, 1931.)

I FEEL very honoured that I should have been asked to address this, The Montreal Chapter of The Canadian Society of Cost Accountants & Industrial Engineers. Costs relative to agricultural products or as a matter of fact anything at all that has to do with agriculture, is a subject causing a great deal of comment at the present moment. After all even at normal times I do not suppose there is any Industry which has such bearing on the welfare of our country. Agriculture is an industry which has changed probably more than any other in its methods in the last few years. Farmers in their methods have gone ahead with leaps and bounds. Electricity has been installed in a great many farms in Ontario and Quebec, with the result that labour saving devices, unheard of twenty-five years ago, are now taken as a matter of course. Probably the only way in which farmers have shown little or no improvement, is in their bookkeeping methods. Possibly one farmer in every ten, marks down the cash paid out or taken in—or the amount he owes, and that is owed to him. In almost every case, this is the extent of a farmers activity as a bookkeeper. Certainly there is not one out of every fifty who makes any further attempt than this at keeping books, so here we have one of the countries' most important industries carrying on without the aid of even cost records to base its further activities on; and without the aid of business methods or principles as a whole.

At the present time, Canada's position as far as agriculture is concerned is not at all satisfactory. That there is need of a large visioned agricultural policy, with definite, and generally accepted objectives, in line with the objectives of National Policy as a whole is a matter attracting increasing attention. With Russia pursuing a rural policy, which shows at least that the directing power knows where it wants to go even though in the opinion of many people it may not be in that straight and narow path. Other countries, our own included, have need to take stock of their positions and consider the condition of their future success in agriculture.

Sales Have Declined

If you look over some of the comparisons on our trade reports of recent date, you will be able to determine to just what an extent our country has need to take stock of its position. Here are just a few of the most important changes, apart from grain in the past year. In September, 1929, we exported fresh beef to the value of $488,000 as compared with $50,000 in September, 1930—a drop of $440.000 in only one month of the year. In the same month of the two years the value of bacon exported dropped from $558,000 to $275,000. Pickled beef in barrels from $15,500 to $643. All told, our one months' exports of meat has fallen from $1,449,441 to $680,861.

Not only have our exports of agricultural products dropped to an alarming degree, but our imports of these same products have increased accordingly. For the twelve months ending September 30th, we imported butter to the value of $15,500,000 as compared with $10,500,000 for the same period last year. We even imported more than half a million dollars worth of cheese in the past twelve months. We also consumed nearly three million dozen om imported eggs as against nearly one million dozen last year.

It is probably impossible to state definitely why these conditions exist. The reports which I have just referred to, show that while our Western farmers are growing more wheat than the world can use, our cities or business centers are buying eggs, butter and cheese, as well as fruits and vegetables from all over the world. It is not possible that some understanding could be arrived at between these two bodies of buyers and sellers or consumers and producers, whereby, one would produce what the other wanted to buy, and the other buy what the other had to sell. Everyone knows that until recent years wheat growing was unknown in Western Canada, when the Government and railway companies experimented, and found that this kind of farming was possible on the prairies. The settlers there, prior to that, only went in for cattle raising, immense quantities of beef being produced. However, since then, immigration has been encouraged. Grants of land were allowed immigrants for wheat growing, and the Canadian West has become a wheat growing country; instead of Canadian cities or I suppose cities in any other part of the world using more wheat or bread, they are using less and less all the time. For instance, in Montreal we have all kinds of fruit and vegetables on our tables all the year round in season and out. In the winter season when we can no longer buy home grown vegetables or fruit, we do not find that meat, bread or some other product of Canada takes their place, although a much higher price must be paid foreign fruits and vegetables are used; the result is that our grainaries are overflowing with wheat when probably our farmers should be growing more beef, producing more butter, eggs and cheese, while possibly our cities could use more Canadian grown products.

Need for Business Methods

Costs relative to agricultural products are really the application of business methods to agriculture. Some one with whom I was discussing this question asked why it was that when as the younger generation grew up on a farm and obtained business educations (girls in particular), some of them did not return and make an effort at setting up some sort of bookkeeping system. I do not know why it is, but I think if a system could be introduced that was simple and yet efficient in this way or some other way, that at least some of the agricultural questions facing the country at the present time might be averted.

However, I am afraid that I am wandering from my subject, and possibly touching a question which only concerns politicians, but I just wanted to make it clear how important it is for the business world to keep in close touch with the farmers, or vice versa, and that closer relations might be to their mutual advantage, as after all, a depression in the grain market in Canada largely affects business as a whole.

I am not sure that I should not have entitled this paper "The Difficulties of Cost Accounting on a Farm," as I am going to spend quite a good deal of my time on the difficulties to be overcome. As a matter of fact, the difficulties are so numerous that it would be impossible for a farmer who has had no business education, and who has all his time taken up by manual labor, to put into practice a system which would be at all effective.

The first difficulty encountered is the use of the land. If the land is very valuable this item will be large. For instance, if the farm is situated near some city, or public works, I mean utility works, the yearly charge for the use of the land or the rental paid, if the farm is rented, might be so large that the farm would be operating at a loss and it would be impossible to produce crops and show a profit.

There is also the difference in costs with regard to seasons. One year the land may be easily worked. When we have large rains in the fall of the year ploughing goes much quicker than in a dry fall. In the spring the land may work easily making seeding and the working of the land a light operation. The result is that in a year of this kind, cost of production is lower than usual, making it impossible to base next year's operations on the figures showing the cost of production during the year just mentioned. There is also equal chances, of course, that cost of production would be higher, the conditions being reversed. In seeding, the ground in Eastern Canada, it is the practice to work the land over three or four times before seeding and possibly once afterwards. When the land has been prepared for the seed and gets rain before the actual seeding takes place, the ground becomes hard, as of course there is no drainage after the field has been worked. This makes it necessary to work the field again, thus increasing cost of production on this particular field.

Another difficulty is the value allowed for seed grain. In the spring of 1930, wheat was selling considerably over $1.00 per bushel. In valuing the seed this is the figure which would have to be taken. This fall or when the crop was harvested, it did not bring more than 50c per bushel at the farm. The farmer sows two bushels of wheat per acre. Supposing a man paid $1.00 per bushel for his seed, which is quite possible, and sold his crop for 50c, which is quite probable, in such a case the yield would have to be three fold, or six bushels per acre, before returns covered seed alone. In many places this year the crop did not yield six bushels per acre. In such cases, what amount would have to be allowed for seed, in figuring the cost of production? As a matter of fact, during a recent investigation under the auspices of the Dominion Government, the cost of producing wheat has been found to vary in different sections and on different farms from 50c per bushel to $5.00 per bushel in the same year.

When arriving at the cost of milk production, it is a question whether the idle years of a cow's life should be charged or not. Then when a calf is born should the cost of raising it be charged to the cost of producing milk. In that case if the calf was sold when half grown, the proceeds would have to be credited to the milk account, which would give an inaccurate cost of production figure. One experimental farm in Western Canada valued the calf at $1.00 when it was born, and until it became productive it remained on the books as an asset valued at $1.00. If in the meantime it was sold the difference between

the selling price and the value, $1.00, was credited to profit and loss. I may say that when the auditors audited the Province of Saskatchewan books a few years ago, they questioned this method, but dropped the matter, possibly for want of one better. I think that the proper way to handle this situation would be to open a cattle account keeping it separate from milk, and when a calf is born, the milk account should be credited and the cattle account debited for its value. The cost of feeding the calf until it becomes productive should be charged to the cattle account. Then when it becomes productive, it should be transferred to the milk account at the market value. If the calf is sold in the meantime, the proceeds would be credited to cattle and debited to sales accounts.

Joint Costs

It is also claimed that there are many joint costs which costs must be pro-rated among different crops and that it is impossible to apportion such costs accurately. For example, in the production of grain, crops, straw, as well as grain is produced, but some arbitrary method of dividing the entire cost of the whole crop between the straw and the grain must be assumed. Then again, when manure or commercial fertilizers are applied to a field, they benefit not only the crop to which they are applied, but also the others which follow in the rotation. Any rule which may be used to distribute the cost among the various crops can only be an arbitrary rule, and cannot cover all cases.

Then we have the problem of choosing the next year's activities or crops, and deciding which crop should be raised. The profit on any crop is largely affected by its value which varies widely from year to year, or even from seed time to harvest. Thus it is unsafe to decide that because a crop is most profitable one year it will be the same the following year, then as I said before, the variation in climatic conditions between different seasons make average figures on costs somewhat unreliable because while one year may be ideal for doing certain farm operations, the next may be so adverse as to not only considerably increase the labor involved in producing the crop, but also to greatly reduce its yield and quality as well.

In addition to the problems which I have just mentioned, there are a great many smaller matters which would confront us, were we installing an accounting system for farmers; such things as the upkeep of a car which is used for business as well as pleasure. The depreciation of land, buildings and machinery, also living expenses, most of which comes from the farm. A great deal of estimating would have to be done in placing these charges on the books. However, if a definite system of accounting was introduced in agriculture I think a great many of these smaller difficulties could be overcome. If accounts were opened for each of the farm's activities as is done in business, I think that it would simplify matters a great deal, but here, of course, you run into the difficulty which I first mentioned. A farmer would almost have to obtain his accountants degree before he would become efficient enough to put into practice a bookkeeping system that would be at all useful even as a cost record. On Government operated experimental farms, as far as I know, the cost systems vary, and it is only when a special study is made and an average taken over a period of years, that is, the variations in climate, fluctuations in expense items or seed, and fertilization, are spread over a period of years that costs can be arrived at, which are at all accurate.

Reducing Costs

Naturally the object of all cost of production studies is the reduction of these costs. There are several methods of reducing cost of production figures on a farm. The two most important are: The more economical production of heavier yields per acre of land under cultivation, and, secondly, the use of larger machinery and more labor saving equipment. The most important one of the two is the production of larger yields per acre. Many items in the expense of growing a crop are the same whether the crop be small or large, while only a few items vary directly with the yield. It is clear that overhead, including such items as rent or the use of the land, preparation of the soil, seeding, cutting, and the depreciation on machinery, do not vary materially no matter what yield is secured. The costs of hauling, storing and threshing do vary with the yield, but they are relatively a small percentage of the total cost. Larger yields will entail greater cost per acre, but will give smaller cost per bushel or per ton of crop raised, unless of course the cost of the increased yield is greater than its value, which will be very unlikely. In the production of larger yields, all better farming practices should play a part. The neglect of one practice may cause a poor yield, even though all the other practices are followed out. The buying of good seed, grain, adequate manure, or fertilizer, proper drainage, thorough cultivation and effective control of weeds, insects and fungus diseases all play an important part in increasing crop yields.

Secondly, just a word on the use of larger machinery and more labor saving equipment. This is a method of reducing cost of production which reduces the expense of manual and horse labor. Hired labor on the farm has gradually increased in price and decreased in quality. On many farms it is desirable to purchase sufficient equipment to enable one to dispose with all hired help except that which is absolutely necessary. In recent years farm machinery firms have made considerable progress in the manufacture of larger machines, which enables more work to be done per day than would be possible otherwise, or a few years ago. The use of larger machinery in harvesting operations in the West, is the reason for the Harvester's excursion having been discontinued. Since the use of combines in harvesting, wheat has become common in the West, a multitude of men are no longer necessary. This year, where hay was grown on the prairies, the farmers used machines which cut the hay and pressed it in one operation. These machines simply cut the hay off the field and load it on to a wagon or truck driven beside the combine, tied in bales and weighed. This economy in the use of larger machinery has not only the advantage of saving expense in manual labor, but it enables the farmer to do more of his work at the proper time. This advantage is most useful in facilitating earlier seeding in the spring, which by the way is a very important factor in an increase in production, because the earlier a crop is sown the more time it has to mature, as one sown late in the spring does not get advantage of the longer days and runs the chance of being frozen in the fall. Larger machinery is also more affective in the control of weeds. Shadow, as it is called in Quebec, is one of the worst weeds we have in Eastern Canada. The best way, or I might say the only way, of working this weed out of the soil is by summer cultivation when the roots are turned up to the

heat of the sun they dry out and die. As you know it is impossible to work horses heavily during the heat of the summer, so that the tractor has been found very effective in the killing during the summer of this weed.

Study Most Profitable Lines

There is another method which might be considered a means of reducing cost of production—that is the substitution of a larger percentage of more profitable for less profitable crops. This is a problem which takes long study in order to accomplish the desired change successfully. It must be studied over a period of years in order to determine which crops give the best results, also to determine which fit in best with the crops in the rotation and other enterprises carried on on the farm. Because one crop gives more apparent profit than some other, does not necessarily mean that it should take its place. The labor required to grow this crop may come at a time of the year when it conflicts with that required for some other crop or with other of the farm's activities. However, it is possible to select the more profitable crops from those which belong to a group that require their labor at the same season of the year. It is a very important study to determine which crops are the most profitable. Undoubtedly the market price of the crop or the animals to which the crop is to be fed, has a very important bearing upon the profit. No one can accurately predict the price in advance, and this makes the selecting of the best crop more or less a matter of chance. On farms where there is more labor available than is required for the production of crops being grown, a certain acerage of crops should be substituted having a higher value per acre. For instance, on a farm now entirely used in the production of grain crops and where possibly they have a surplus of help, both men and horses, a change of a portion of the farm to vegetables or root crops would be profitable, as these crops give a higher yield per acre and also require a great deal more work. The object, of course, should always be to adopt a rotation including crops which do not conflict with each other in their labor requirements, which give the highest profits per acre, and which provide for the full time work of the available manual and horse labor.

These, gentlemen, are some of the difficulties that would confront us were we, as I said before installing an accounting system for farmers. These are some of the difficulties that will have to be overcome before this industry is carried on as other industries.

I think that it is just possible that this lack of oversight in agriculture has a great deal to do with our existing hard times. In order to better these conditions, a revolution in agriculture will have to take place. I believe that the time is coming when farmers will have to organize in order to cope with competitive conditions which exist all over the world in every industry. The time is coming when farmers will have to keep accurate account of their activities as all other industries do. When every industry, even agriculture, will be unable to carry on without the aid of an oversight which covers the conditions and markets all over the world. Only recently Russia adopted a measure whereby all farmers or small land owners will either have to join co-operative societies or give up activities. I believe that it is part of the five year plan we read so much about, that all farming

in Russia must be done by co-operative societies under Government control on a business basis. Probably this policy is wrong in its ideals, but we must admit that it is not entirely void of reason, and while some of the steps taken in Russia to obtain the desired ends are not entirely in line with our ideas of right and wrong, it is not possible that the principle that these people are working on, I mean the bringing of agriculture under a supervision where business and accounting methods will be applied to it, is it not possible that this may be one or the only way out of the difficulties of cost accounting on a farm?

COST OF PRODUCING WHEAT IN WEST

THE frequently discussed question as to whether wheat is actually selling below cost is dealt with by the Canadian Wheat Pool in the following manner:

It is regrettable that it is practically impossible to name a cost of production figure for producing wheat in Western Canada. Some factors which render a typical cost of production figure difficult are: (1) The difference in size of farms; (2) The difference in managerial ability on the part of the individual farmer; (3) The difficulty of distributing costs between various units of agricultural production; (4) Differences in farming technique, and the varying efficiency with which power machinery is applied to production; (5) The lack of proper accounting methods on the farm.

The Department of Farm Management of the University of Saskatchewan has made an analysis of the operating costs of 421 farms, in different parts of the Province of Saskatchewan, for the crop years 1925, 1926 and 1927. The survey of 421 farms showed the following cost data; the first column being the range of costs of production, the second, percentage of farms in each group at this cost:

Cents per Bushel.	No. of Farms.
Not over 40	6
41 to 60	11
61 to 80	26
81 to 100	24
101 to 120	14
121 to 140	7
141 to 160	5
Over 160	7

The above figures do not include actual interest payments by farmers, and as farms in Western Canada are, as a rule, mortgaged for varying amounts, inclusion of interest charges would materially increase the above figures.

The above cost of production figures may or may not be typical of farms generally, but they indicate at least that the present return per acre of wheat in the West is not sufficient to cover the cash costs of producing wheat, let alone non-cash costs, such as interest on invested capital, a wage allowance for the farmer, depreciation on machinery, etc. The report of the Department of Farm Management further states: "Obviously in 1930 cash costs of production have not been returned on the majority of Saskatchewan farms, and in few cases have grain farmers received anything towards non-cash costs."

COST AND MANAGEMENT

Transportation costs and net returns to growers in Western Canada. All costs basis actual charges being insured by Canadian Wheat Pool for May-June, 1931, ocean shipment, were as follows:

	Cents per Bushel
Liverpool price (May 26, 1931) per bushel, No. 2 Northern Atlantic April shipment	70.63
Deduct	
(1) Outturn and marine insurance	1.00
(2) Loading into boat at Montreal and ocean freight to Liverpool	6.00
(3) Handling, brokerage, wharfage, etc., at Montreal	0.50
(4) Lake freight Fort William to Montreal by all-water route, including vessel brokerage and terminal unloading charges	9.50
(5) Lake insurance, outturn and C.I.F. brokerage	0.75
(6) Loading, inspection, weighing, Lake shippers' transfer, etc., at Fort William	1.50
(7) Railway freight typical Saskatchewan point to Fort William	13.50
(8) Average country elevator handling charges—(average of consigned at 3c and Saskatchewan Pool street spread at 4c)	3.50
Total cost of handling and shipping from country point to Liverpool	36.25
Net return to grower at country elevator	34.38

The Cost of Industrial Accidents

(From Industrial Welfare and Personnel Management)

AN engineering consultant to an insurance company has made an interesting analysis of a number of accidents and has revealed the large part occupied by what he calls hidden costs, that is in brief, costs other than the direct charges for compensation and medical care on behalf of the injured. An examination of 36 injuries incurred in an average woodworking plant gave the following information:

Total cost of compensation and medical aid represented 18 per cent of the total.

The remaining 82 per cent paid directly by the employer covered hidden costs, and was made up as follows:

Time lost by injured employees, in consequence of accidents, and paid for by the employer	15 per cent.
Cost of time lost by other employees	36 " "
Time lost by foremen and superintendents, as a result of accidents	25 " "
Spoilage of material	4 " "
Broken and damaged tools	2 " "

THE COST OF INDUSTRIAL ACCIDENTS

Some of the factors in the hidden cost of accidents are detailed below. They exclude compensation and liability claims, medical and hospital charge, insurance premiums, cost of lost time, except when such cost is actually paid by the employer without reimbursement.

1. Cost of lost time of injured employee.
2. Cost of time by other employees who stop work:
   (a) Out of curiosity.
   (b) Out of sympathy.
   (c) To assist injured employee; or
   (d) For other reasons.
3. Cost of time lost by foremen, supervisors, or other executives as follows:
   (a) Assisting injured employee;
   (b) Investigating the cause of the accident;
   (c) Arranging for the injured employee's production to be continued by some other employee;
   (d) Selecting, training, or breaking-in a new employee to replace the injured employee; and
   (e) Preparing State accident reports, or attending hearings before industrial commissioners.
4. Cost of time spent on the case by first-aid attendant and hospital department staff, when this time is not compensated by insurance.
5. Cost due to injury to the machine, tools, or other property, or to the spoilage of material.
6. Cost due to interference with production, failure to fill orders on time, loss of bonuses, payment of forfeits, and other similar causes.
7. Cost under employee welfare and benefit systems.
8. Cost in continuing the wages of the injured employee in full, after his return—even though the services of the employee (who is not yet fully recovered) may for a time be worth only about half of their normal value.
9. Due to the loss of profit on the injured employee's productivity, and on idle machines.
10. Cost of subsequent injuries that occur in consequence of the excitement or weakened morale due to the original accident.
11. Overhead Cost—the expense of light, heat, rent, and other such items—which continues while the injured employee is a non-producer.

"Can you hear me there?"
"Yes."
"Can you see me?"
"No."
The builder rejoined the foreman, and remarked, with a self-satisfied air:
"Now, them's what you can call walls!"

Abie: "So you play golf mit knickers?"
Ikey: "No, I play mit vite peoples."

The 1931-32 Season

By W. A. McKague, General Secretary.

THERE is a depression in business, but not in cost accounting, and the prospects are that the 1931-32 season, now at hand, will be the most active in the history of our organization. In just a few instances memberships have been dropped through the necessity of reducing current expenses to a minimum. While on the other hand more and more firms are realizing that thinner margins of profit necessitate more accurate costing and more careful study of the cost information.

A majority of those who formerly held junior memberships, which class was dropped from March 1, last, are remaining in the Society on the uniform basis of $15 a year, while reduction in the major membership fee from $20 to $15 assists in extending the Society.

From recent correspondence with Chapter officers, I find that each Chapter is already well advanced with its program arrangements, and there is a good chance of all programs being completed by the end of September. While it is not easy to tie up speakers for several months in advance, the advantages of having a program completed at the start of the season are many.

As President Guilfoyle was attending the annual meeting of the Dominion Association of Chartered Accountants, in Regina, in August, Winnipeg Chapter arranged for his presence in that city for a meeting on August 17th. The next Winnipeg meeting will likely be held before the end of September. Ward W. McVey, C.A., is again in charge of Winnipeg's program. Our Winnipeg Chapter, now three years old, has made some excellent contributions to the Society's literature.

Vancouver plans an early start also, September 15th being set as the date for the first meeting. John Harvey, C.A., is handling the program arrangements. It is just one year since Vancouver Chapter was organized. Though from the far east the prospects for a cost organization in Vancouver appeared uncertain, the response at the organization meeting was prompt and effective; in fact several of those present voiced their surprise that our Society had neglected Vancouver for so long. From the quality of material developed last season, the new Chapter can be relied upon to again do its part.

Central Ontario Chapter will again look for Toronto and Hamilton members to start the talking, but it has not yet failed on the follow through, and the courtesy and hospitality of Central Ontario is becoming so well known that Toronto and Hamilton members will soon have to form a line for the chance of a visit. October 14th is the probable opening date, and Guelph the probable place. There is a possibility of a golf game or some other special feature being arranged for the opening, and President Guilfoyle is being invited to speak.

Hamilton Chapter, which at its opening last year had what is probably the biggest attendance at any meeting ever held by the Society, this year has an executive which is not going to rest on its oars. A successful golf day was held early in the summer. September 15th has been fixed for the opening barrage of discussion. This follows immediately after the Central Ontario opening at Guelph, and there are rumors that Hamilton may carry off the Guelph gathering for a whole day's program in Hamilton.

Toronto Chapter has already arranged, in conjunction with the Ontario Institute of Chartered Accountants, for an address on October 2nd on Budgetary Control, by E. S. Larose, who was so well thought of by the members who heard him in Hamilton last spring, that a Toronto address was at once planned. The rest of Toronto's program is now being arranged. Chairman Mapp, with Mr. Guilfoyle, has also had to be at Regina, but on his return things are to be quickly put into shape. Toronto Chapter, as the pioneer unit of the Society, and the location of its central headquarters, has always been one of its mainstays. Last year Montreal passed it in membership, however. History does not yet relate how prodigious was the effort put forth by Montreal, but Toronto evidently does not intend to lag behind. For this year, it is moving right up to the best accommodation that can be secured, at the Royal York Hotel, and the speakers and the attendance will be made to correspond.

Montreal may safely be mentioned last, because it is rarely last in anything. Apart from that exceptional event in Hamilton, a year ago, which members from Toronto and Central Ontario supported by their presence, Montreal at its opening and closing dinners sets a high standard for speakers, attendance and entertainment. The large membership developed in Montreal is undoubtedly the accumulated result of the work of the excellent chairmen and directors Montreal has had in past years. Several weeks ago Mr. Louthood and his associates already had this season's program far advanced, and Montreal members can rest assured that it will equal or exceed those of past years.

The writer plans to be on hand for the Vancouver meeting on September 15th, and for the Winnipeg meeting about September 28th, and for opening meetings in other Chapters in October.

CHAPTER NOTES

HAMILTON

Reported by R. Dawson, Secretary-Treasurer.

Hamilton Chapter have planned their opening meeting for Thursday, October 15th, at the Royal Connaught Hotel, with Dominion President, H. E. Guilfoyle, as guest speaker.

The Hamilton Chapter plan an aggressive campaign during the coming fall and winter, and a series of most interesting lecturers will be heard. Various social events are also planned, and altogether the Ambitious City Chapter looks to be in for the best season in its history.

Most of the directors are at present on vacation, trying to improve their golf, but immediately upon their return, arrangements will doubtless be made for another social event which promises to eclipse even the recent golf tournament, while in addition, the Programme Committee will finally arrange for a most interesting array of speakers and subjects for the coming season.

THE TREND OF PRODUCTION COSTS

THE Dominion Bureau of Statistics index number of commodity prices, with 1926 as the base period, declined from 72.2 in June, to 71.7 in July. The main groups compare as follows:

	July 1930	June 1931	July 1931
Foods, beverages and tobacco	90.5	70.1	69.9
Other consumers' goods	85.9	80.2	80.0
All consumers' goods	87.7	76.2	76.0
Producers' equipment	91.2	89.1	98.1
Building and construction materials	89.5	83.3	83.3
Manufacturers' materials	76.4	62.0	61.0
All producers' materials	80.4	65.9	65.0
All producers' goods	81.5	68.2	67.4
All commodities	85.3	72.2	71.7

The most important reductions in July were in the following: Canned fruits, grains, vegetables, furs, cotton fabrics, scrap iron, brass and copper. The most important advances were in the following: Fresh foreign fruits, vegetable oils, hides and skins, raw silk, silk fabrics, lead and tin ingots.

COST LITERATURE

RECEIVED IN AUGUST

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